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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|-------------------------|------------------|
| 10/615,055 | 07/07/2003 | Norman L. Owens | 129881 | 8042 |
| 7590 | 09/22/2005 | | EXAMINER | |
| Kenneth A. Nelson Bryan Cave LLP Suite 2200 Two North Central Avenue Phoenix, AZ 85004-4406 | | | VU, HUNG K | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2811 | |
| | | | DATE MAILED: 09/22/2005 | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------------|-----------------------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/615,055 | OWENS ET AL. <i>(initials)</i> |
| | Examiner | Art Unit |
| | Hung Vu | 2811 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 27 June 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 27-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 27-41 is/are allowed.
- 6) Claim(s) 42-46 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date: _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 42-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hikita et al. (PN 6,133,637) in view of Lo et al. (PN 6,507,120, of record).

Hikita et al. discloses, as shown in Figure 39, a method of manufacturing a semiconductor component, the method comprising:

providing a leadframe (12) having a surface, the surface defining a horizontal direction and a line perpendicular to the surface defining a vertical direction;

providing a semiconductor chip (17) having an active side and an inactive side;

attaching the semiconductor chip to the leadframe;

attaching an integrated passive component (14) to the semiconductor chip such that:

the semiconductor chip is located between the integrated passive component and the leadframe;

the semiconductor chip, the integrated passive component, and the leadframe have a vertical relationship with respect to each other;

disposing a mold compound (22) around the semiconductor chip, the integrated passive component, and the leadframe such that a portion of the leadframe is exposed outside of the mold compound,

wherein:

the integrated passive component comprises a passive device [Col. 4, lines 49-52].

Hikita et al. discloses attaching the semiconductor chip to the leadframe such that the active side faces the leadframe and the inactive side faces the integrated passive component. However, Lo et al. discloses a method of manufacturing a semiconductor device comprising attaching the semiconductor chip to the leadframe such that the active side faces the leadframe and the inactive side faces the integrated passive component. Note Figures 2-12 of Lo et al.. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the semiconductor chip of Hikita et al. having the active side faces the leadframe and the inactive side faces the integrated passive component, such as taught by Lo et al. in order to reduce the area and the thickness of the package and to increase the density of the package.

Regarding claim 43, Hikita et al. and Lo et al. discloses providing the leadframe comprises providing a quad flat non-leaded leadframe..

Regarding claim 44, Hikita et al. and Lo et al. discloses attaching the semiconductor chip to the leadframe comprises electrical coupling the semiconductor chip to the leadframe using flip chip interconnects.

Regarding claim 45, Hikita et al. and Lo et al. discloses the method further comprising wire bonding the integrated passive component directly to the leadframe.

Regarding claim 46, Hikita et al. and Lo et al. discloses providing the integrated passive component comprises providing a component other than a semiconductor device.

Allowable Subject Matter

2. Claims 28-41 are allowed.

Response to Arguments

3. Applicant's arguments with respect to claim 42 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2811

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung K. Vu whose telephone number is (571) 272-1666. The examiner can normally be reached on Tuesday-Friday 6:00-4:30, Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Steven Loke can be reached on (571) 272-1657. The Central Fax Number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Vu

September 16, 2005

Hung Vu

Hung Vu

Primary Examiner